SECTION 400

SUB-BASE, BASE COURSES, SHOULDERS, PAVEMENTS AND BERMS

SECTION 401

GRAVEL SUB-BASE

DESCRIPTION

401.20 General.

The gravel sub-base shall consist of approved gravel placed on the subgrade and in close conformity with the lines and grades shown on the plans or established by the Engineer.

MATERIALS

401.40 General.

Materials shall meet the requirements specified in the following Subsections of Division III, Materials:

Gravel Borrow	M1.03.0, Type a or b
Processed Gravel	M1.03.1

CONSTRUCTION METHODS

401.60 Gravel Sub-base.

The gravel shall be spread and compacted in layers not exceeding 200 millimeters in depth, compacted measurement, except the last layer of gravel Sub-base course (conforming to M1.03.0 Type a or b, or M1.03.1) will be 100 millimeters in depth compacted measurement and all layers shall be compacted to not less than 95 percent of the maximum dry density of the material as determined by the Standard AASHTO Test Designation T 99 compaction test Method C at optimum moisture content as determined by the Engineer. If the material retained on the 4.75 millimeter sieve is 50% or more of the total sample this test shall not apply and the material shall be compacted to the satisfaction of the Engineer. The specific density of the Gravel Sub-base shall be maintained by determining the number of passes of a roller required to produce a constant and uniform density, after conducting a series of tests either using the sand/volume or the nuclear device.

Any stone with a dimension greater than that permitted for the type of gravel specified shall be removed from the sub-base before the gravel is compacted. Compaction shall continue until the surface is even and true to the proposed lines and grades within a tolerance of 10 millimeters above or below the required cross sectional elevations and to a maximum irregularity not exceeding 10 millimeters under a 3 meter line longitudinally. In locations when the 200 millimeters of gravel is used as a base for Item 405 this tolerance shall be 20 millimeters under a 3 meter line. Any specific area of gravel sub-base which, after being rolled, does not form a satisfactory, solid, stable foundation shall be removed, replaced and recompacted by the Contractor without extra compensation. The gravel foundation for cement concrete surfacing shall be conditioned in accordance with the provisions of Subsection 476.61.

COMPENSATION

401.80 Method of Measurement.

Gravel for sub-base shall be measured as specified in Subsection 150.80.

401.81 Basis of Payment.

Gravel for the sub-base will be paid for at the contract unit price per cubic meter for Gravel Borrow.

Payment for shaping and compacting of the sub-base as specified herein shall be included in the item of Gravel Borrow.

401.82 Payment Items.

151.	Gravel Borrow	Cubic Meter
152.	Processed Gravel	Cubic Meter

SECTION 402

DENSE GRADED CRUSHED STONE FOR SUB-BASE

DESCRIPTION

402.20 General.

Dense Graded Crushed Stone for Sub-base consists of crusher-run coarse aggregates of crushed stone or gravel and fine aggregates of natural sand or stone screenings uniformly pre-mixed and placed on the sub-grade or sub-base in close conformity with the lines and grades shown on the plans or established by the Engineer.

MATERIALS

402.40 General.

Material shall meet the requirements specified in the following Subsection of Division III, Materials:

Dense Graded Crushed Stone for Sub-base	M2.01.7

CONSTRUCTION METHODS

402.60 General.

Grade control survey shall conform to Subsection 5.07. The Contractor shall furnish, set, and maintain all line and grade stakes.

402.61 Spreading and Compacting.

The Dense Graded Crushed Stone shall be spread in layers from self spreading vehicles equipped with automated grade controlled equipment. Power graders or conventional self spreading vehicles may be used only with prior written approval of the Engineer. The Dense Graded Crushed Stone shall be placed to the tolerance as stipulated in Section 401, Gravel Sub-base. Suitable watering devices shall be available at the source of supply and on the project for use as directed by the Engineer to prevent segregation in transit and during spreading and to obtain proper density and stability of the mixture. The specified density of the Dense Graded Crushed Stone shall be maintained by determining the number of passes of a roller required to produce a constant and uniform density, after conducting a series of tests either using the sand/volume method or the nuclear device.